What I claim is:

CLAIMS

1.   A method for use in a communications system utilized by users of telephone or modem calls, the communications system having more than one processor with a plurality of processors forming a module, each processor for performing various functions by executing code stored in a memory device, the method for upgrading the stored code for any one of the processors or for recovering one or more processors, comprising:
    determining one or more of the processors of a particular module to be 'bad';
    scheduling recovery of the 'bad' processor;
    "busying out" the particular module so that no calls are processed through the particular module; and
    attempting recovery of the 'bad' processor.

2.   A method for use in a communications system as recited in claim 1 wherein during the step of attempting recovery, downloading a particular code to the 'bad' processor and treating the 'bad' processor as operational.

3.   A method for use in a communications system as recited in claim 1 wherein the determining step includes waiting a predetermined number of times for calls through the one or more processors to fail prior to the marking step.

4.   A method for use in a communications system as recited in claim 1 further including, after the step of determining, marking the bad processors as being in a 'Recover Pending' cannot accept incoming calls.

5.   A method for use in a communications system as recited in claim 4 further including the step of recovering the processors that are in 'Recovery Pending' state without adversely affecting the users.

6.   A method for use in a communications system as recited in claim 1 further including, after the step of stopping, retrying recovery.

7.   A network access server (NAS) for use in a communications system having a first communications device coupled to communicate through a public switching telephone network (PSTN), and a second communications device, coupled to communicate through a packet switching network, the NAS including processors for transferring communications information between the first and the second communications devices wherein the processors require upgrading or recovery comprising:
    a modem card coupled to receive telephone calls and operative to generate processed telephone calls including,

one or more modules, each module having a module controller, a memory block and a plurality of digital signal processors for executing code, stored in the memory block, to perform various tasks, the module controller coupled to the plurality of digital signal processors for attempting recovery, during upgrading or recovery, of one or more of the digital signal processors of a particular module having been designated as 'bad',

wherein the impact of recovery or upgrade of the digital signal processors to the users is minimized while the overall system capacity is maximized.

8. A network access server as recited in claim 7 further including a processor card coupled to said modem card for assigning an in-coming call to one of the digital signal processors of the particular module.

9. A network access server as recited in claim 7 wherein the processors included within the NAS for designating the particular module as being 'bad'.

10. A network access server as recited in claim 7 wherein the packet switching network is the Internet and the network access server further includes an Ethernet connection for coupling the modem card and the processor card to the Internet.

11. A network access server as recited in claim 7 further including a controller card responsive to T1 transmission lines coupling information from the public switch telephone network and operative to provide the modem card and the processor individual calls for processing.

12. A network access server as recited in claim 7 wherein the information being coupled onto the T1 lines is Time Division Multiplexed.

13. A network access server as recited in claim 7 further including a controller card responsive to E1 transmission lines coupling information from the public switch telephone network and operative to provide the modem card and the processor individual calls for processing.

14. A network access server as recited in claim 7 wherein the information being coupled onto the E1 lines is Time Division Multiplexed.

15. A network access server as recited in claim 7 wherein the processor is further of disabling one or more of the plurality of digital signal processors that have been designated as 'bad'.

16.   A network access server as recited in claim 7 further including a failed counter for counting the number of consecutive digital signal processor failures prior to determining the same is 'bad'.

17.   A network access server as recited in claim 8 further including a shared bus for coupling the processor and the modem card.

18.   A network access server as recited in claim 7 wherein the memory block of the particular module includes code for use by the digital signal processors of the particular module.

19.   A network access server as recited in claim 8 wherein the particular module includes separate storage spaces for storing code corresponding to a digital signal processor of the particular module.

20.   A network access server as recited in claim 8 wherein said processor includes nonvolatile memory storage space for storing code for use by the digital signal processors and for downloading the code to a 'bad' digital signal processor during upgrading or recovery.

21.   A network access server as recited in claim 8 wherein said processor includes a hard disk device for storing code for use by the digital signal processors and for downloading the code to a 'bad' digital signal processor during upgrading or recovery.

22.   A network access server as recited in claim 8 wherein code for use by the digital signal processors is stored externally to the NAS.

23.   A network access server (NAS) for use in a communications system having a first communications device coupled to communicate through a public switching telephone network (PSTN), and a second communications device, coupled to communicate through a packet switching network, the NAS including processors for transferring communications information between the first and the second communications devices wherein the processors require upgrading or recovery comprising:
           means for receiving telephone calls and generating processed telephone calls including,
               module means including one or more modules, each module having a module controller, a memory block and a plurality of digital signal processors for executing code, stored in the memory block, to perform various tasks, the module controller coupled to the plurality of digital signal processors for attempting recovery during upgrading or

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recovery of one or more of the digital signal processors of a particular module having been designated as 'bad',

wherein the impact of recovery or upgrade of the digital signal processors to the users is minimized while the overall system capacity is maximized.

24. A network access server as recited in claim 23 further including a processor card coupled to said modem card for assigning an in-coming call to one of the digital signal processors of the particular module.

25. A network access server as recited in claim 23 wherein the processors included within the NAS for designating the particular module as being 'bad'.

26. A network access server as recited in claim 23 wherein the packet switching network is the Internet and the network access server further includes an Ethernet connection for coupling the modem card and the processor card to the Internet.

27. A network access server as recited in claim 23 further including a controller card responsive to T1 transmission lines coupling information from the public switch telephone network and operative to provide the modem card and the processor individual calls for processing.

28. A network access server as recited in claim 23 wherein the information being coupled onto the T1 lines is Time Division Multiplexed.

29. A network access server as recited in claim 23 further including a controller card responsive to E1 transmission lines coupling information from the public switch telephone network and operative to provide the modem card and the processor individual calls for processing.

30. A network access server as recited in claim 23 wherein the information being coupled onto the E1 lines is Time Division Multiplexed.

31. A network access server as recited in claim 23 wherein the processor is further of disabling one or more of the plurality of digital signal processors that have been designated as 'bad'.

32. A network access server as recited in claim 23 further including a failed counter for counting the number of consecutive digital signal processor failures prior to determining the same is 'bad'.

33. A network access server as recited in claim 24 further including a shared bus for coupling the processor and the modem card.

34. A network access server as recited in claim 23 wherein the memory block of the particular module includes code for use by the digital signal processors of the particular module.

5   35. A network access server as recited in claim 24 wherein the particular module includes separate storage spaces for storing code corresponding to a digital signal processor of the particular module.

36. A network access server as recited in claim 24 wherein said processor
10   includes nonvolatile memory storage space for storing code for use by the digital signal processors and for downloading the code to a 'bad' digital signal processor during upgrading or recovery.

37. A network access server as recited in claim 24 wherein said processor
15   includes a hard disk device for storing code for use by the digital signal processors and for downloading the code to a 'bad' digital signal processor during upgrading or recovery.

38. A network access server as recited in claim 24 wherein code for use by the
20   digital signal processors is stored externally to the NAS.